

## C l a i m s

1. Colour separator, e.g. for video projectors, comprising a surface adapted to be moved through a light beam including a number of wavelengths to be separated, the surface comprising a diffractive or holographic optical element (DOE) capable of directing different wavelengths comprised in the light beam towards different parts of a predetermined area said diffractive/holographic optical element generating a repeating colour pattern, e.g. a continuous colour spectrum, as a function of scanning.
2. Separator according to claim 1, wherein the surface is positioned on a rotating part so as to provide a repeated scan of wavelengths over the predetermined area.
3. Separator according to claim 1, wherein the surface is drum shaped being rotatable according to the drum axis.
4. Separator according to claim 1, wherein the surface is a plane, disc shaped surface.
5. Separator according to claim 1, wherein the DOE is constituted by a number of focussing DOEs, each for directing the separated colours to selected parts of the imaging device.
6. Separator according to claim 5, wherein the focussing are at least partially overlapping.
7. Separator according to claim 1, wherein the DOE is adapted to direct both first and second order diffraction toward the imaging device, and that the DOE is provided with a smooth transition between the two when moved along the direction of movement.
8. Separator according to claim 1, wherein the DOEs are reflective.

9. Separator according to claim 1, wherein the DOEs are transparent diffracting the light passing through the elements.
10. Separator according to claim 1, wherein the DOE is constituted by a thick  
5 film holographic element.
11. Separator according to claim 1, wherein the DOE is constituted by a surface hologram.
- 10 12. Separator according to claim 1, wherein the DOE is provided on a flat surface being tilted or rotated relative to a chosen axis for scanning through the diffracted spectrum.
13. Use of colour separator according to claim 1, in a video projector, said  
15 projector comprising a lamp with a chosen spectrum, focussing means for directing light toward a chosen part of the separator, imaging device positioned within said predetermined area and optical system for projecting the image.
14. Video projector comprising colours separator according to claim 1, also  
20 comprising a lamp with a chosen spectrum, focussing means for directing light toward a chosen part of the separator, imaging device positioned within said predetermined area, said imaging device being synchronised with said colour separator for providing an image corresponding to the colour projected on each part of the device, and an optical system for projecting the image.
- 25 15. Use of a video projector according to claim 14 for projecting stereoscopic images, wherein the imaging device is programmed to project two images at different sets of wavelengths, representing stereoscopic images, said sets of wavelengths both corresponding to a full RGB colour spectrum, said images being viewable using two  
30 adapted filtering devices, each letting one of said sets of wavelengths through.